College of Agriculture and Home Economics
THE OHIO STATE UNIVERSITY

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Charles Z. Aki
Leroy J. Hushak
George W. Morse

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Department of Agricultural Economics and Rural Sociology
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Fiscal incentives, such as tax concessions, low-cost industrial development bonds, and the provision of certain essential public services to new firms, are commonly employed by local policymakers in order to stimulate local economic development. The empirical evidence on the effectiveness of local fiscal policies designed to encourage employment growth is mixed and inconclusive. While some studies suggest that local fiscal policies significantly influence employment growth (for example, Ervin, 1976; and Grieson, et al, 1977), the bulk of the literature argues that taxes have little or no impact on employment growth (Due, 1961; Cornia, et al, 1978; Bahl, 1980; Morse and Farmer, 1983).

Factors such as inadequate theoretical foundation, mispecification of the model, and defective econometric methodology have been cited as reasons why previous studies did not provide conclusive evidence about the extent to which local fiscal policies influence employment growth (McLure, 1970; Grieson, et al, 1977). In this paper, the results of a study that examined the impacts of local tax and public expenditure policies on employment growth in a disaggregated employment model are summarized. The effects of changes in local tax rates and public expenditures on employment growth in Manufacturing (including Construction), Services (including Finance, Insurance, and Real Estate), and Commerce (including Wholesale, Retail, and Transportation) were examined.

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The results of the study will be of assistance to local policymakers who are considering avenues for attracting industry and jobs into their jurisdictions.

The data on all the variables were collected from secondary sources. The county area is the unit of analysis. The 218 non-metropolitan counties in the sample represent 71 percent of all non-metropolitan counties in the East North Central states in 1974. The East North Central states consist of Illinois, Indiana, Michigan, Ohio, and Wisconsin.

The Pattern of Employment Growth

Presented in Table 1 are sample means of sectoral employment, employment growth and percent change for counties in the East North Central states. Of the three business sectors, only Services showed positive employment growth in each period, and grew by 227 percent between 1957 and 1977. Commerce employment growth was positive after 1962, and grew by 45 percent between 1957 and 1977. Between 1957 and 1977, manufacturing employment grew by 37 percent. These patterns of employment growth reflect both local and national forces that influenced the spatial distribution of economic activity in the post-Korean War era. The 1957-62 period was characterized by technological advances in agricultural production which resulted in the "freeing" of labor from the agricultural sector to the non-agricultural sectors. Although most of these advances occurred before 1957, the response to them was still ongoing during the 1957-62 period. Heavy outmigration from non-metropolitan counties is another factor underlying the decline of employment during this period.

The Vietnam War, higher labor force participation rates of women and the "war-baby cohort" have been cited as causes of the high rate of growth in employment between 1963 and 1969 (Greenwood, 1981). Other factors that contributed to sectoral employment growth are the 1964 permanent tax cut and the easing of credit restrictions beginning in 1966 (Greenwood, 1981).

Table 1

Average Sectoral Employment and Employment Change
in Nonmetropolitan Counties of East North Central States
(man-years and percent)[a]

	1957-1962	1962-1967	1967-1972	1972-1977
Manufacturing & Construction	3092	3011	3875	3856
	(-81)	(864)	(-19)	(371)
	[-3]	[29]	[*]	[10]
Services	543	813	1175	1422
	(270)	(362)	(247)	(355)
	[50]	[45]	[21]	[25]
Commerce	1851	1757	2058	2492
	(-93)	(301)	(434)	(199)
	[-5]	[17]	[21]	[8]

[a] Mean sectoral employment is for the beginning of the period with employment change for the period in parentheses and percent change for the period in brackets for the five-year periods corresponding to Census of Governments years.

* Less than 0.5 percent.

Employment growth was less robust between 1967 and 1972 because of the decline in labor transfer out of agriculture, the tapering off of the increase in female labor force participation, lower productivity increases in manufacturing, and the 1970 business slump (Greenwood, 1981). Employment growth remained positive in 1972-77 partly because of the rural to urban net migration turnaround in the early 1970s, and the movement of Manufacturing and Service firms away from large urban centers to non-metropolitan counties.

Trends in Public Revenues and Expenditures

Presented in Table 2 are average real per capita public revenues from property taxes, non-property taxes, intergovernmental revenues, and general debt; and real per capita public expenditures on education, non-education, and public capital. Between 1957 and 1972, the property tax was the largest source of local public revenue in non-metropolitan counties of the East North Central states. Intergovernmental revenues were important throughout, and were larger than property tax revenues in 1977. Between 1962 and 1972, real property tax revenues more than doubled, intergovernmental revenues increased by 77 percent, and general debt increased by 71 percent (Table 2).

There was a real growth in public education and non-education expenditures between 1957 and 1977 (Table 2). Public education expenditures nearly doubled in constant 1967 dollars, while public non-education expenditures more than doubled. Public education expenditures increased from about 47 percent of total public expenditures in 1957 to 52 percent in 1977, while non-education expenditures increased from 33 percent in 1957 to 37 percent in 1977. Per capita public capital expenditure showed little trend over the period, but declined as a percent of total public expenditures.

Table 2

Average Real Per Capita Public Revenues and Expenditures[a]

Revenue Sources

	Property Taxes $	Non-Property[b] Taxes $	Inter-governmental Revenues $	General Debt $
1957	81.82	26.98	75.58	147.69
1962	74.21	60.46	84.76	158.27
1967	119.55	43.59	107.50	190.58
1972	182.68	29.42	134.14	252.34
1977	125.11	73.81	165.98	172.65

Public Expenditures

	Education $	Non-Education[c] $	Capital $	CPI[d]
1957	94.95	68.30	43.54	84
1962	95.25	90.62	36.46	91
1967	125.47	101.91	44.00	100
1972	164.23	131.00	49.27	125
1977	186.47	138.71	43.41	181

[a] Revenues and expenditures are in 1967 dollars per capita.

[b] Non-property taxes consist of local sales and income taxes and charges and miscellaneous.

[c] Non-education expenditures include expenditures such as highway, police protection, and health expenditures.

[d] CPI = consumer price index, 1967=100. Nominal revenues or expenditures for any year can be obtained by multiplying real revenues or expenditures by the CPI for that year and dividing by 100.

Impact of Local Fiscal Policies on Employment Growth

A ten-equation econometric model, consisting of sectoral employment, local fiscal policy, migration, income, and capital sub-models, was used to examine the impacts of local taxes and expenditures on employment growth. In the employment sub-model, the impacts of changes in property tax rate, non-property tax rate, education expenditures, non-education expenditures and public capital expenditures on changes in manufacturing, services, and commerce employment were estimated. The property tax rate is defined as the ratio of property tax revenues (Table 2) to the market value of property. The non-property tax rate is the ratio of non-property tax revenues (Table 2) to personal income. The expenditure variables are as defined in Table 2. The model was estimated over four five-year periods beginning in 1957 and ending in 1977. A detailed specification and explanation of the model is in Aki (1983).

The change in non-property tax rate, dNPTR, had no statistically significant effect on manufacturing and commerce employment growth. But in the services sector, employment growth was positively and significantly related to change in non-property tax rate in 1957-62 and 1962-67. Since the correlation between the beginning of period non-property tax rate and dNPTR was -0.600 in 1957-62 and -0.537 in 1962-67, counties which had lower non-property tax rates at the beginning of these periods were those that experienced larger increases in non-property tax rate and services employment growth. The change in non-education expenditures (dNEDX) and dNPTR had high positive correlation coefficients. Since dNEDX was positively and significantly related to services employment growth during these periods, it can be inferred that services employment growth may have been higher in counties which initiated larger

increases in non-education public expenditures and non-property tax rates in 1967-72 and 1972-77.

The change in property tax rate, dPTR, had a statistically significant effect on manufacturing employment growth only in 1967-72. Counties which initiated larger increases in property tax rate experienced faster manufacturing employment growth between 1967 and 1972. Since the correlation between the beginning of period property tax rate and dPTR was -0.352, the result suggests that counties which had lower property tax rates in 1967 were those that initiated larger increases in property tax rate between 1967 and 1972. There probably was a shift in the location of manufacturing firms away from high tax counties to low tax counties between 1967 and 1972, resulting in the loss of property tax base in the former. This may have enabled low tax counties to increase property tax rates more rapidly without hampering the growth of manufacturing employment. The lack of a consistent effect in other periods makes it highly doubtful that firms moved to counties with low tax rates in response to this tax differential.

The change in property tax rate had a positive and statistically significant impact on services employment growth in 1957-62, 1962-67 and 1972-77. The beginning of period property tax rate and dPTR were negatively correlated in 1957-62, 1967-72 and 1972-77. This suggests that services employment growth may have increased with increases in property tax rate in counties which had lower property tax rates at the beginning of these periods. In 1967-72, the results indicate that increases in the property tax rate significantly reduced services and commerce employment growth. No satisfactory explanation has been found for these contradictory results.

The impact of the change in public education expenditures, dEDX, on manufacturing employment growth was positive and significant only in 1972-77.

During this period, an additional dollar of public education expenditure per capita resulted in about 11 additional manufacturing jobs per county. The positive impact of increases in public education expenditures on manufacturing employment growth coincides with large increases in state aid to education during 1972-77 (Hushak, 1983).

The change in public education expenditures had a positive and significant impact on services employment growth in 1957-62, 1967-72 and 1972-77. The services employment growth impact of an additional dollar of public education expenditure per capita increased from about 10 additional jobs per county in 1957-62 to 17 additional jobs in 1967-72; it declined to about 8 additional jobs per county in 1972-77.

The change in public education expenditures had a positive effect on commerce employment growth in 1967-72 and 1972-77. However, the impact of dEDX was significant only in the latter period.

The change in non-education public expenditures (dNEDX) and the change in public capital expenditures (dPC) had no significant impacts on manufacturing employment changes in any period. In the services sector, dNEDX had a positive and significant impact on employment growth in 1967-72 and 1972-77. A county's ability to capture rapidly growing state and federal transfer payments for federal highways and other programs in the 1960s, may have played a significant role in the services employment growth impact of dNEDX.

Public capital expenditure increases had a positive and significant impact on services employment growth only in 1967-72. The impact of dPC was negative and significant in 1957-62. However, the correlation between dPC and public capital outlay in 1957 was -0.758 which suggests that counties with larger reductions in public capital over 1957-62 had higher levels of public capital outlays in 1957.

The change in non-education public expenditures was positively related to commerce employment growth in 1957-62, 1967-72 and 1972-77. The impact of dNEDX was significant only in 1972-77. The change in public capital expenditures was not a significant factor in commerce employment growth.

Conclusions and Policy Implications

In general, changes in local tax rates and public expenditures had no consistently significant impacts on sectoral employment growth. Although there probably was a shift in manufacturing activity away from high tax counties to low tax counties in 1967-72, it is not clear that this was due to tax rates. If it was due to tax rates, this period stands alone in demonstrating this effect.

Change in public education expenditure had a significant impact on manufacturing employment growth only in 1972-77. Of all the local fiscal policy variables examined, only change in public education expenditure is likely to exert a significant impact on services employment growth. This variable had a positive and statistically significant impact on services employment growth in three of the four periods examined.

No fiscal policy variables had any significant effect on commerce employment growth in the first half of the study period. Change in property tax rate had a negative and significant impact on commerce employment growth only in 1967-72, and changes in public education and non-education expenditures had a positive and significant impact on commerce in 1972-77.

The above findings imply that local tax rates and public expenditures are generally not effective long-term policy instruments for stimulating sectoral employment growth. Local governments may be able to exploit advantages of low tax rates or high public expenditures for short periods of time. However,

exploitation which leads to success erodes the advantage in a short period of time through higher tax rates or other counties catching up. The ability of local policymakers to take early advantage of state aid for education, federal highway subsidies, and other intergovernmental grants probably played a major role in the short run stimulation of employment growth in their counties. However, the advantages of early exploitation were probably eroded by 1977.

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